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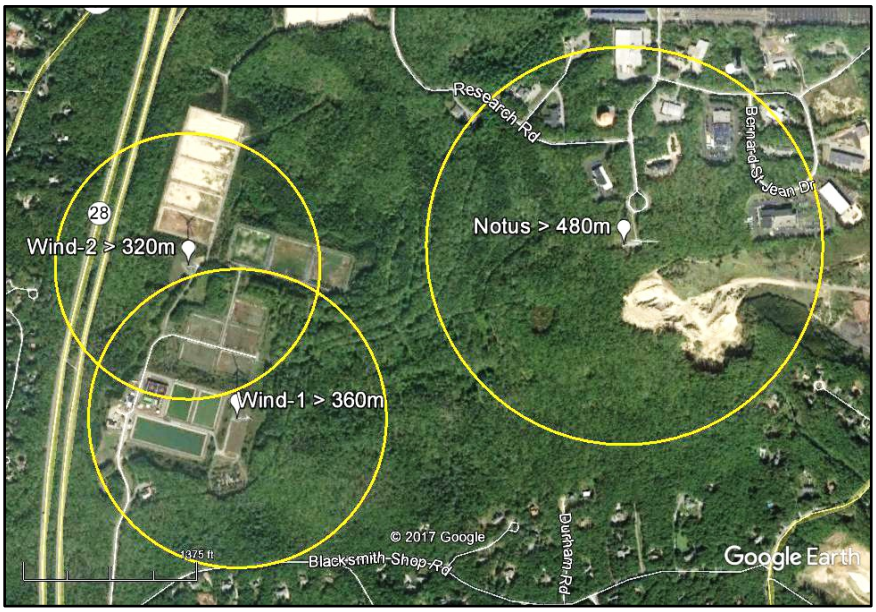
Falmouth Wind Turbines: Decision for larger, overlooked louder

Separation distance is the solitary wind turbine noise control method to assure protections for public health and compatibility with the area[1]. A direct relationship connects sound power level (Lw) to noise source distance: ISO 9613-2, section 7.1: Adiv=20Log(m)+11 dB. The MassDEP regulates the maximum noise level increase (LI) to more than 10 dB (Lmax) above the baseline ambient (BA) L90, without the noise source when measured (or predicted) at the neighbor's property line (PL). A simple equation predicts the highest allowed sound power level by distance: Lw = Adiv + LI + BA.

1. Locate Wind-1, Wind-2 and Notus on Google Earth (GE),

2. Using GE's ruler circle draw, measure each wind turbine distance to the nearest residential property lines.

3. The highest allowed wind turbine sound power levels are shown in the table below comparing manufacturers published noise data.



Noise Source	Property Line Distance, Meters	Adiv, 20Log(m)+11, dB	MassDEP Level Increase LI, Lmax dB	MassDEP Baseline Ambient BA, L90 dBA	Highest Allowed Wind Turbine Lw dBA	Manufacturer Model and Lw: Vestas V82 1.65 MW 110 dBA	Vestas V47 660 kW 102 dBA	Northwind N100 100 kW 94 dBA
Wind-1	360	*62*	*+10*	*27**	*99*	*Exceeds*	*Exceeds*	*Complies*
Wind 2	320	*61*	*+10*	*27**	*98*	*Exceeds*	*Exceeds*	*Complies*
Notus	480	*65*	*+10*	*27**	*102*	*Exceeds*	*Complies*	*Complies*

* Measured at neighbors. Lower L90s were measured near the wastewater treatment plant.

[1] Two international consensus guidelines may be used to evaluate the effectiveness of a regulatory statute: WHO 2009 Table 1 noise effects on health, and ANSI S12.9, Parts 4 & 5 assessment of compatibility.